Avery Weigh-Tronix

# PC-220 Counting Scale
# User's Manual

**UNITED STATES**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**CANADA**

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la Class A prescrites dans le Reglement sur le brouillage radioelectrique que edicte par le ministere des Communications du Canada.

## EUROPEAN COUNTRIES

## WARNING

**This is a Class A product. In a domestic environment this product may cause radio interference in which the user may be required to take adequate measures.**

## CAUTION

**Risk of electrical shock. Do not remove cover. No user service-able parts inside. Refer servicing to qualified service personnel.**

**Weigh-Tronix reserves the right to change specifications at any time.**

12/13/04 PC220_U.P65 PN 29772-0013D e1 Printed in USA

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# Introduction

This manual covers the operation of the PC-220 parts counting scale by Weigh-Tronix. Major sections of the manual begin with black barred text as seen above. Minor section headings appear in the left column along with important notes and warnings.

## Installation

**Warning**

*The unit must be plugged into a properly grounded outlet that is within easy access from the scale location.*

Place the unit on a firm, level surface that is free from drafts and vibration. Place the unit in a location ergonomically suited for the user.

Level the scale using the adjustable footpads. Center the bubble in the bubble level located below the Weigh-Tronix logo on the front panel.

Plug the power adapter to an appropriate power source. See note at left. The display will perform a self-test and then show the normal display mode.

## Sleep Mode

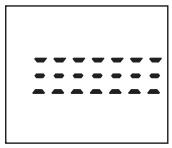
*Short key press = 1 beep*
*Long key press = 2 beeps*

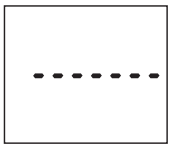
To put the unit to sleep, long press the **I/O** key. See note on short vs. long key presses at left.

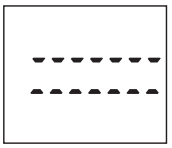
To wake up the scale, short press the **I/O** key.

## Error Messages

Below are examples of various error messages you may see. If a persistent error message appears, disconnect then reconnect power to the unit. If problem persists, contact your local authorized Weigh-Tronix distributor.


Temporary error


Weight unsteady


Balance failed

Over range

Under range

**Error Code:**

| | |
|---|---|
| E 0 | Disconnect then reconnect power to the scale. |
| E 5 | Disconnect then reconnect power to the scale. |
| E 10 | Battery failure. Recharge or replace batteries. |
| E11 | Power supply voltage is too high. |
| E15 | Contact local W-T distributor. |
| E 20 | Weight error. Remove weight from scale and long press the **Clear** key. |
| E 30 | Contact local W-T distributor. |
| E 35 | Contact local W-T distributor. |
| E 100 | Invalid PLU contents. Reprogram the PLU. |
| E 101 | Transaction failed. Remove weight from scale and long press the **Clear** key. |
| E 102 | PLU write failed. |
| E 103 | Tare failed. Remove weight from scale and long press the **Clear** key. |

## PC-220 Front Panel

### Keypad

The front panel of the PC-220 is made up of the keypad, for entering information, and the display. The keypad of the PC-220 is shown in Figure 1. The display window is shown in Figure 2.

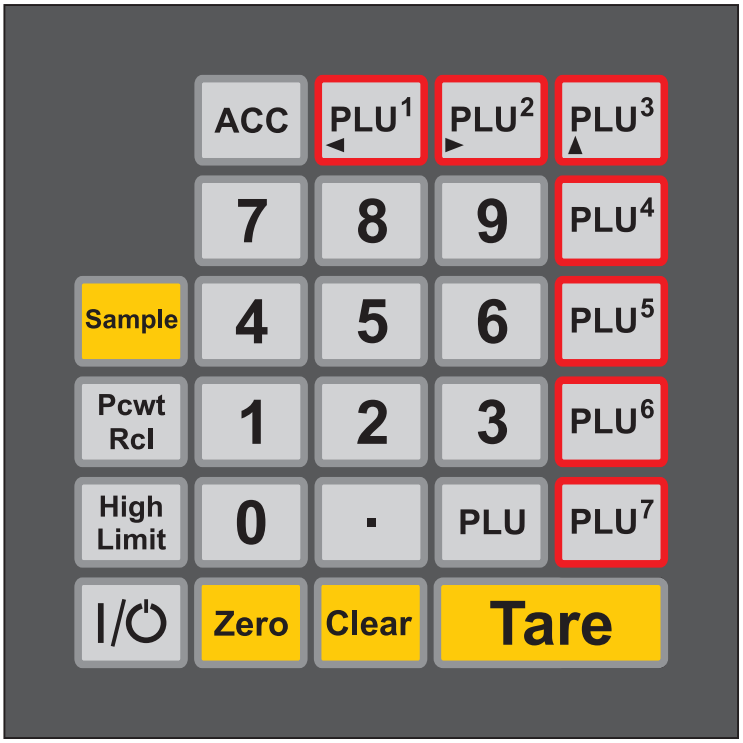



**Figure 1**
PC-220 front panel

### Display

Below is a brief description of the keys on the keypad.

I/ **On/Off** key. Use this key to put the unit in sleep mode, wake it from sleep mode or to access menus.

Zero Use this key to zero the display.

Clear Use this key to clear all active PLUs, tares, piece weights and accumulator totals. Also used to clear an error message.

Tare Press this key to tare a weight from the scale.

Sample Use this key to calculate sample weights of items placed on the scale.

Pcwt Rcl Press this key to temporarily display the current pieceweight.

High Limit Use this key to set high limit alarm. This beeping alarm sounds when the count exceeds the number you set.

Use this key to accumulate counts of items and to view accumulated totals.

Use this key to enter or recall a PLU for PLU memory slot 1-7. The three keys with arrows are also used when you navigate the menus in management mode and for service functions.

Use this key to enter or recall a PLU for PLU memory slots 1-35.

Use these keys to enter numbers for tares, piece weights, etc.

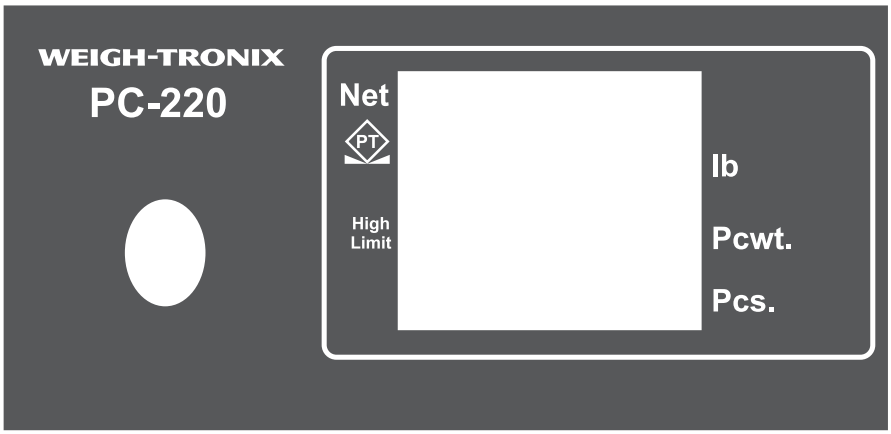



**Figure 2**
PC-220 display window

The appropriate annunciator will light next to the labels surrounding the display. For example, when in net weighing mode a small triangle will appear pointing at the word **Net**.

When you are in the counting mode the screen will display the information shown in Figure 3.

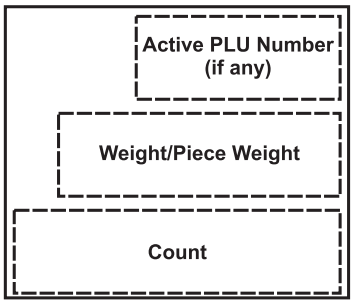



**Figure 3**
Count mode display information

# Using the Scale

This section shows you the steps required to perform weighing and counting operations. The first few sections are general information on zeroing the scale, clearing values, and using tares. After that are specific instructions on performing sampling and doing counting operations.

## Zeroing the Scale

*Short key press = 1 beep*
*Long key press = 2 beeps*

Be sure the scale is always zeroed before doing a weighing or counting function.

To zero the scale, make sure the scale is empty and short press the **Zero** key. . .

***0*** weight and the center-of-zero mark is displayed.

## Using the Clear Key

Be sure there are no active tares, piece weights or PLU (piece weight lookup) values.

To clear all these values, long press the **Clear** key.

## Clearing a Numeric Entry

If you are keying in a value via the numeric keypad and make an error, you can erase the last digit entered or the entire entry.

To erase the last digit entered, short press the **Clear** key. . .

The last digit is deleted from the display.

To erase the entire number, long press the **Clear** key. . .

The entire number is deleted from the display.

## Using Tares

To perform a tare, place the container or object to be tared on the scale platform and short press the **Tare** key. . .

The Net annunciator lights and the display shows zero weight.

### Keying in a known tare weight

*If there is scale motion as you press the* **Tare** *key, the action may not take place. Try pressing* **Tare** *again.*

To key in a known tare weight, with the scale empty and the display zeroed, key in the tare value via the keypad and short press the **Tare** key. . .

The Net **and** Tare annunciators light and the display shows a negative weight.

Place the tared object and the items to be weighed on the scale. . .

The net weight of the items is displayed.

### Cancelling a tare

*If there is scale motion as you press the* **Tare** *key, the action may not take place. Try pressing* **Tare** *again.*

To cancel an active tare value, empty the scale and short press the **Tare** key. . .

The Net annunciator disappears and the display shows zero weight.

## Sampling Parts for Counting

There are two types of sampling—normal and reverse.

### Normal sampling

To do a normal sampling, follow these steps:

*When you sample light weight items or items with a large weight variation, use a large sample size to increase the accuracy and use either manual or automatic resampling. Resampling is covered in a following section.*

1. Be sure the scale is empty and short press the **Zero** key.

2. Place a counted quantity of items on the scale, then key in the quantity on the keypad and short press the **Sample** key. . .

   The weight of the samples is shown on the middle line of the display. The number of items is shown on the bottom line of the display.

*The minimum sample weight is set through the management mode. See the Service Manual.*

3. If the calculated sample weight is below the minimum needed by the scale for accuracy, the display will ask you to place more items on the scale. Place the items on the scale and short press the **Sample** key. . .

   The weight of the samples is shown on the middle line of the display. The number of items is shown on the bottom line of the display.

*Short key press = 1 beep*
*Long key press = 2 beeps*

4. The scale is now ready for counting.

### Reverse sampling

The reverse sampling method is described below.

1. Be sure the scale is empty and short press the **Zero** key.

2. Place a quantity of items on the scale, then short press the **Sample** key. . .

   **SPLE** is displayed on the top line of the display and the weight of the samples is shown on the middle line.

3. Remove and count several items from the scale, then key in this number via the keypad. Short press the **Sample** key. . .

   The weight and count of all the items on the scale is displayed.

4. The scale is ready to count.

## Resampling

Resampling can increase the counting accuracy of your scale. You can do this manually or the scale can be set up to do it automatically. The auto-update function must be set through menus found in the Service Manual. Below are the instructions for manual resampling.

### Manual resampling

Once you have sampled a group of items, you can add an equal or greater amount to the scale and then resample. Follow the steps below for this manual resampling procedure.

*Short key press = 1 beep*
*Long key press = 2 beeps*

Sample the items normally as described above, then add more items to the scale (equal to or more than the items already on the scale). Long press the **Sample** key. . .

The piece weight is updated and the count is shown.

## Using Piece Weights

Below are the steps to enter, view and clear piece weights.

### Keyboard Entry of Piece Weights

You can key in a known piece weight via the keypad. Key in the weight in pounds if using lb units or key in the weight in grams if in kg units, then short press the **Pcwt/Rcl** key. This becomes the new active piece weight.

### Viewing Active Piece Weight

To view an active piece weight, short press the **Pcwt/Rcl** key. The *Pcwt.* annunciator lights and the piece weight is briefly shown on the display.

### Clearing the Active Piece Weight

Short press the **Pcwt/Rcl** key and short press the **Clear** key while the piece weight is displayed. The piece weight is deleted and the weight is displayed.

## Using the High Limit Alarm

Below are instructions for setting, viewing, and clearing a high limit alarm value. The high limit alarm will sound when the count displayed on the scale exceeds the number you set. You can set a high limit before or after sampling.

### Setting the high limit

To set the high limit, key in the number via the keypad and short press the **High Limit** key. . .

The high limit number becomes active. When you count items, if the count exceeds the high limit, a beeping alarm will sound.

### View the current high limit

To view the current high limit value, short press the **High Limit** key. . .

The value will be displayed briefly in the display.

### Clearing the high limit

*Short key press = 1 beep*
*Long key press = 2 beeps*

To clear a high limit, short press the **High Limit** key and short press the **Clear** key while the high limit is displayed. . .

The high limit is deleted and the weight is displayed.

## Using Part Look Up (PLU) Keys

Use Part Look Up (PLU) keys to store and recall piece weight and/or tare weight for an item. You can store up to 35 PLUs.

Use the **PLU** key to set up or recall any of the 35 PLUs. There are 7 **PLU$^{x}$** keys called hot keys. Use these to quickly setup or recall PLUs for the first seven of the 35 PLUs. You should assign the most commonly counted items in your inventory to these 7 keys.

Below are instructions for creating, recalling and clearing PLUs.

### Creating a PLU

You can create a PLU using three methods; by using the **PLU** key, by using the **PLU$^{x}$ hot key**, or using the auto-store PLU. All three methods are described below.

#### Method 1 Using PLU key

*Remember that a PLU can store a piece weight and/or a tare weight.*

*Individual PLUs can be locked so changes cannot be made. See the Service Manual for instructions.*

Using the PLU key, you can assign a PLU to one of 35 available memory slots. These are numbered 1-35. Follow these steps to create and store a PLU:

1. Create a piece weight using any of the techniques covered in the section *Using Piece Weights*.
2. Create a tare (if so desired) by one of the methods covered in the section *Using Tares*.
3. Key in a number for the PLU (1-35) and long press the **PLU** key. If you want the PLU to be available through one of the 7 hot keys on the front panel you must choose a number between 1 and 7(inclusive). . .

The PLU is created and stored.

**Method 2 Using the PLU$^{x}$ hot key**

Using the **PLU$^{x}$ hot keys**, you can assign a PLU to one of first seven available memory slots. These are numbered 1-7. Follow these steps to create and store a PLU using the hot keys:

1. Create a piece weight using any of the techniques covered in the section *Using Piece Weights*.
2. Create a tare (if so desired) by one of the methods covered in the section *Using Tares*.
3. Long press the **PLU$^{x}$ hot key** where you want to store the PLU. . . The PLU is created and stored.

*Short key press = 1 beep*
*Long key press = 2 beeps*

**Method 3 Auto-store PLU**

You can auto-store a currently active piece weight and/or tare weight by doing a long press of the **PLU** key. The data will be stored in the first empty memory slot. The PLU number will be displayed on the top line of the display if the action was successful.

## Recalling a PLU Using the PLU key

To recall a PLU from any of the 35 memory slots using the **PLU** key, Key in the number of the PLU and short press the PLU key. . . The PLU information becomes active and you can begin counting the items associated with that PLU.

## Recalling a PLU Using a PLU$^{x}$ hot key

To recall a PLU from any of the first seven memory slots using a **PLU$^{x}$ hot key**, short press the hot key where the PLU you want is stored.. . . The PLU information becomes active and you can begin counting the items associated with that PLU.

## Clearing a PLU

*Individual PLUs can be locked so changes cannot be made. See the Service Manual for instructions.*

To clear any PLU, with no weight on the scale long press the **Clear** key then key in the PLU number via the keypad and long press the **PLU** key. . . The information from that memory slot is cleared.

## Clearing a PLU Using a PLU$^{x}$ hot key

To clear any hot key PLU, with no weight on the scale long press the **Clear** key then long press the **PLU$^{x}$ hot key** you want cleared. . . The information from that memory slot is cleared.

# Accumulator Function

The PC-220 has an accumulator feature which allows you to add together or accumulate counts of items to keep a running total of items counted so far. You can store up to 9999 accumulations and a total count of 9,999,999. Follow the steps below to accumulate counts and clear the accumulated totals.

## Accumulating counts

*The displayed count must change by 25% since the last accumulation before a new count can be accumulated. This prevents double counting of the same items.*

With a count displayed on the screen, short press the **ACC** key. . .

The currently displayed count is added to the accumulator total, provided the count is able to be added. The accumulator step count is also incremented by 1. The accumulator information is momentarily displayed. The number of accumulations is on the top line of the display and the accumulator total is on the bottom line.

## Viewing accumulator values

To view the accumulator information, short press the **ACC** key while no count is displayed. . .

The information will be briefly shown on the display.

## Clearing accumulator values

To clear accumulator information, short press the **ACC** key, then short press the **Clear** key while the accumulator information is displayed

OR

Long press the **Clear** key during normal operation.

This clears all active data; piece weight, tare, accumulator and accumulator counter.

# Management Mode

Management mode is a menu structure you enter to set various options in the PC-220. The display will look similar to that shown in Figure 4 when you are in management mode.

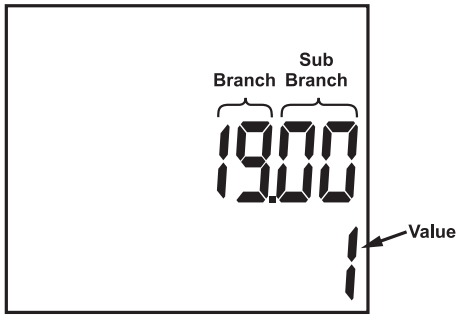



**Figure 4**
Management mode display sample

**Attention**

***You MUST press the* Clear *key to clear a value before keying in a new one.***

You use the following keys to enter and navigate through the menu and set the options. Also see the note at left.

Short press this key, then key in the number 6231 to enter the management mode.

Long press this key to move to the next branch.
Short press this key to move to the next sub-branch.

Long press this key to go to the previous branch.
Short press this key to go to the previous sub-branch.

Short press this key to select the value to be changed.
Long press this key to return to branch 00.

*After you change a value, you must go to the next branch to accept the value.*

Short press this key to increment the value.
Long press this key to increment the value 10x.

Press the

followed by the

key to exit management mode.

## Beeper Alarm

*Factory defaults are shown in **bold**.*

Go to branch 19, sub-branch 00

**0 = off**
1 = on

## Keyboard Beeper

Go to branch 19, sub-branch 01

0 = off
**1 = on**

## Weight Limit Beeper

Go to branch 19, sub-branch 02

0 = off
**1 = on**

## Error Beeper

Go to branch 19, sub-branch 03

0 = off
**1 = on**

## Changing Beeper Volume

Go to branch 19, sub-branch 04

0 = Quiet
**1 = Loud**

## Changing Backlight Time

Go to branch 20, sub-branch 01

0 = always off
1 = 5 seconds
2 = 1 minute
3 = 5 minutes
**4 = always on**

## Changing Sleep Time

*Factory defaults are shown in* ***bold****.*

Go to branch 20, sub-branch 01

**0 = none**
1 = 1 minute
2 = 5 minutes
3 = 30 minutes

## Changing Duration of a Long Press

Go to branch 29, sub-branch 00

200 = 2 seconds
150 = 1½ seconds
**50 = ½ second**

## Changing Minimum Sample Weight

Go to branch 61, sub-branch 00. Enter the minimum sample weight in grams on a KG scale and in pounds on an LB scale.

For example: **1 lb**

## Changing Manual Resampling Range

Go to branch 61, sub-branch 01

0 = manual resampling off
100 - 1000 = % of initial sampling size **(200)**

## Changing Automatic Resampling Range

Go to branch 61, sub-branch 02

0 = automatic resampling off
100 - 1000 = % of initial sampling size **(0)**

## Changing a PLU Item Weight

*Branch numbers for PLUs = 100 + PLU number. For example:*
*PLU 5 = 105*
*PLU 20 = 120*

Go to PLU branch number (example shown is PLU 5).

Sub-branch 00
Enter the item weight (grams shown below)

Sub-branch 01
Enter the number of decimal places

## Changing a PLU Tare

Go to PLU branch number (example shown is PLU 5).

Sub-branch 02
Enter the tare weight (grams shown below)

Sub-branch 03
Enter the number of decimal places

## Protecting a PLU

Go to PLU branch number (example shown is PLU 5), sub-branch 4.

0 = Not protected
1 = Protected

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